

INTERNATIONAL PRELIMINARY EXAMINATION
(PCT Article 36 and Rule 70)

Rec'd PCT/PTO

16 FEB 2004

10/524766

REC'D 16 FEB 2005

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Applicant's or agent's file reference P 5232 PC00	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/IS 03/00024	International filing date (day/month/year) 15.08.2003	Priority date (day/month/year) 16.08.2002
International Patent Classification (IPC) or both national classification and IPC G06F17/30		
Applicant DIMON-HUGBUNADARHUS EHF.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 8 sheets, including this cover sheet.
☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
These annexes consist of a total of 5 sheets.

3. This report contains indications relating to the following items:
 - I ☒ Basis of the opinion
 - II ☐ Priority
 - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV ☐ Lack of unity of invention
 - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI ☐ Certain documents cited
 - VII ☐ Certain defects in the international application
 - VIII ☐ Certain observations on the international application

Date of submission of the demand 15.03.2004	Date of completion of this report 16.02.2005
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**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/IS 03/00024

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-33 as originally filed

Claims, Numbers

1-25 as originally filed

Drawings, Sheets

1/7-7/7 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/IS 03/00024**

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	
	No: Claims	1,4-10,12,14,17-25
Inventive step (IS)	Yes: Claims	
	No: Claims	1-3,11,13,15,16
Industrial applicability (IA)	Yes: Claims	1-25
	No: Claims	

2. Citations and explanations

see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/IS 03/00024

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

The following document (D1) is referred to in this communication; the numbering will be adhered to in the rest of the procedure:

D1: WO 00/56033 A (ORACLE CORP) 21 September 2000 (2000-09-21)

I. Objections under Article 6 PCT

The application does not meet the requirements of Article 6 PCT, because claim 1 is not clear.

1. The expression "special purpose programing language" used in claim 1 (line 26), is vague and renders the subject-matter of the claim unclear. It appears from the description (p.7. lines 30-37, "By requiring ... programs.") that it is a programming language used for managing XML processing tasks (e.g., XSLT engine, HTML-to-XML converter, etc.), therefore for the rest of the examination this term is interpreted as equivalent of XML based programming language.

2. D1 describes a method (and a system) which receives a request from a client and generates an appropriate request, forwards the request to a XML processor which obtains XML documents from one or more XML and non-XML sources and creates a XML document which is passed to the post processor to be filtered and formatted according to the needs of the requesting entity.

2.1 The "special purpose programming language" as defined in claim 1 does not imply special technical features which are not disclosed in D1.

2.2 More over the XML (the Extensible Markup Language) is a W3C recommendation for creating special-purpose markup languages (see <http://en.wikipedia.org/wiki/XML>).

II. Objections under Article 33(2) PCT

1. The present application does not meet the requirements of Article 33(2) PCT, because the subject-matter of claims 1,4-10,12,14, and 17-25 is not new.

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/IS 03/00024

D1 discloses :

A management system for execution of tasks involving context-independent processing (p.3 lines 19-21, "A method ... client) of structured data, the system comprising :

- means for receiving a request from an external client (p.4 lines 26-27, "In general ... thereon.")

- a context-independent engine

D1 discloses (p.4 lines 26-28, "In general ... documents.") a software module responsible for creating a XML document for managing XML processing task, which corresponds to the claimed context-independent engine. (see the description of the application p.4 lines 20 and 21, "A software ... Engine.")

- at least one adapter module for communicating between said external client and said context-independent engine, and adapting the context-independent engine to a specific application context,

The pre-processor of D1 is responsible for receiving and processing requests from the clients. (p.5 line 34, "Pre-processor ... clients.") In D1 each service request identifies the service that is requested, and may include any number of parameter values associated with the request. (p.5 lines 5-7, "Each ... request.") The pre-processor of D1 also provides in response to a service plurality of metadata (p.11 lines 9-12, "For example ... service.") inserted into the XML file according to the client device type. (p.6 lines 13-16, "According ... document." and p.6 lines 21-26, "The XML ... processor 244.")

The pre-processor of D1 corresponds to the claimed adapter module. (see the application p.6 lines 8-11, "Adapters ... systems." and p.6 lines 19-21, "Through ... pairs.")

- at least one generator module connected to at least one back-end system residing on a computer network and is adapted to expose said at least one back-end system data as structured data ready for further processing,

D1 discloses an XML processor which retrieves the required information from the appropriate data source. (p.7 lines 13-15, "The illustrated ... system." and p.7 lines 26-29, "Gateway ... documents." and p.7 lines 21-24, "In response ... Web.") In D1 gateways are used to supply an XML response document to the XML processor. (p.7 lines 28 and 29, "XML ... documents.")

The combination of the XML processor and the gateways of D1 corresponds to the

claimed generator module. (see the application p.8 lines 22 and 23, "The ... data.")

- at least one sink module connected to said at least one transformer for receiving said processed structured data adapted to interpreting and reacting according to the processed structured data and/or delivering the processed structured data back to said requested external client through said adapter module,

D1 discloses a post-processor responsible for receiving the responses from the XML processor and transforming it according to the format, the layout, and the document type used by the client. (p.8 line 33 - p.9 line 3, "The ... destined." and p.10 lines 15-21, "According ... documents.")

The post-processor of D1 corresponds to the sink module (see the application p.5. lines 30-33, "Sink ... the XSA.") responsible for delivering the data received from the transformer back to the client.

wherein the communication between the external client and the context-independent engine comprises means for selecting at least one generator module and at least one sink module for carrying out said processing of the structured data according to predefined set of instructions defined in an electronic document written in a special purpose programming language, designed for the management of processing any structured data.

D1 discloses the use of an XSL engine (p.8 line 34 - p.9 line 3, "According ... destined.") responsible for transforming the XML response document, based on XSL style sheets, to the format, layout and document type supported by the client. Each XSL style sheet contains instructions defined in an electronic document designed for processing XML documents. (p.10 lines 15-22, "According ... documents.")

Since D1 discloses all the technical features of claim 1 in combination, the subject matter of claim 1 lacks novelty with respect to D1.

The above argumentation applies "mutatis mutandis" to the corresponding independent claims 17 and 25.

2. The subject matter of claim 4 is not new because D1 discloses means for providing XML response document structured as an XML document and XSL style sheets for transforming the response XML document according to the format, layout and document type. (p.8 line 29 - p.9 line 3, "Consequently ...destined.")

The above argumentations also applies to claim 19 which also lacks novelty.

3. The subject matter of claim 5 is not new because D1 discloses means for supporting HTTP requests. (p.6 lines 2 and 3, "In the ... protocol B.)")

The above argumentations also applies to claim 18 the subject matter of which lacks novelty.

4. The subject matter of claim 6 is not new because the gateway of D1 is able to receive and to respond to request through SMS. (p.2 lines 13-15, "SMS ... translator 112.")

The above argumentation also applies to claims 12 and 20 the subject matter of which lacks novelty.

5. The subject matter of claim 9 is not new because D1 discloses means for transforming XML documents with style sheets. (p.9 lines 1-3, "... the XSL engine ... destined.")

The above argumentation also applies to claim 23 the subject matter of which lacks novelty.

6. The subject matter of claim 10 is not new because D1 discloses means adapted to convert a content retrieved from a back-end system (e.g., database) into XML format. (p.8 lines 27 and 28, "Both ... XML")

The above argumentation also applies to claim 24 the subject matter of which also lacks novelty.

7. The additional technical features of claims 7,8,14,21 and 22 merely refer to applying different request protocols by the client device. The subject matter of these claims cannot be seen as novel and/or inventive, because it would follow from natural considerations of the skilled person since the use of these particular protocols is already known in the art and it does not show unexpected, unforeseen technical effect.

III. Objections under Article 33(3) PCT

1. The present application does not meet the requirements of Article 33(3) PCT, because the subject-matter of claims 1-3, 11, 13, 15, and 16 does not involve an inventive step.

1.1 Even if the applicant would disagree with the fact that the (XML) language used in D1 is a special purpose language such as the one defined in claim 1, the subject matter of claim 1 would still lack inventive step because it is well known to the person skilled in the art to use a special purpose language in order to solve corresponding problems.

2. Dependent claims 2, 3, 11, 13, 15, and 16 do not appear to contain any additional features which in combination with the features of any claim to which they refer, meet the requirements of the PCT with respect to novelty and/or inventive step.

Claims

1. A management system for execution of tasks involving context-independent processing of structured data, the system comprising:

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- means for receiving a request from an external client,

- a context-independent engine,

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- at least one adapter module for communicating between said external client and said context-independent engine, and adapting the context-independent engine to a specific application context,

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- at least one generator module connected to at least one back-end system residing on a computer network and is adapted to expose said at least one back-end system data as structured data ready for further processing,

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- at least one sink module connected to said at least one transformer for receiving said processed structured data adapted to interpreting and reacting according to the processed structured data and/or delivering the processed structured data back to said requested external client through said adapter module,

wherein the communication between the external client and the context-independent engine comprises means for selecting at least one generator module and at least one sink module for carrying out said processing of the structured data according to predefined set of instructions defined in an electronic document written in a special purpose programming language, designed for the management of processing any structured data.

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2. The management system according to claim 1, wherein one or several transformer modules are connected to said at least one generator adapted to receive and transform said structured data from said at least one generator to a processed structured data.

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3. The management system according to claim 1, wherein said context-independent engine reads and interprets said electronic document, written in said special purpose programming language, and controls thereby the execution within the management system.

4. The management system according to any of the preceding claims, wherein the processing of the said structured data is performed in the Extensible Mark-up Language (XML) format.

5. The management system according to any of the preceding claims, wherein said adapter module is capable of receiving and responding to requests received through Hyper Text Transfer Protocol (HTTP).

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6. The management system according to any of the preceding claims, wherein the said adapter module is capable of receiving and responding to requests received through Short Message Service (SMS).

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7. The management system according to any of the preceding claims, wherein the adapter module is capable of receiving and responding to requests received through Multimedia Message Service (MMS).

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8. The management system according to any of the preceding claims, wherein the adapter module is capable of receiving and responding to requests received through Simple Object Access Protocol (SOAP).

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9. The management system according to any of the preceding claims, wherein said transformer module is capable of transforming XML data using Extensible Stylesheet Language Transformations (XSLT).

10. The management system according to any of the preceding claims, wherein said at least one generator module is adapted to communicate with at least one of the following back-end systems and convert their native data format to XML format:

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- any ODBC or JDBC compliant databases,
- file system on the computer in which the said management system is executing,
- any data source capable of communicating using the Hyper Text Transfer Protocol (HTTP),
- any data source capable of communicating using the Simple Object Access Protocol (SOAP),
- Microsoft Exchange TM Personal Information Management (PIM) system,
- lotus Domino TM Personal Information Management (PIM) system,
- any directory service through the Light-weight Directory Access Protocol (LDAP),
- any email system through Simple Mail Transfer Protocol (SMTP), Post Office Protocol (POP / POP3) or Internet Message Access Protocol (IMAP).

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11. The management system according to any of the preceding claims, wherein the system is a presentation system comprising:

- at least one adapter modules for receiving requests for content residing in back-end system from at least one network client,
 - a transformer module for transforming, in at least one step, XML source content into mark-up suitable for said at least one client, including:
 - 5 - transforming the XML source content to client independent mark-up,
 - adapting said client-independent mark-up to a version suitable for the particular type of client which requested said content,
 - sink module for delivering said mark-up to said clients.
- 10 12. The management system according to any of the preceding claims, wherein the format of the request from said at least one client is at least one of the following formats:
- portable document format (PDF),
 - client-specific Hypertext Mark-up Language (HTML),
 - 15 - client-specific Wireless Mark-up Language (WML),
 - short Message Service (SMS),
 - Multimedia Message Service (MMS), and
 - compact HTML (cHTML).
 - XHTML
- 20 13. The management system according to any of the preceding claims, wherein the system is a messaging system comprising:
- at least one adapter module adapted to communicate with external systems through
 - 25 a standardized electronic business protocol,
 - at least one generator module adapted to extract business data from source and destination system and expose it as XML,
 - at least one transformer module adapted to transform the relevant XML business source data into business messages,
 - 30 - at least one sink module adapted to delivering the business messages.
14. The management system according to any of the preceding claims, wherein the standardized business protocol is electronic business XML (ebXML).
- 35 15. The management system according to any of the preceding claims, wherein said system is an integration system comprising:
- means for initiating execution of XML processing tasks without invocation from an external client,

- means for synchronization of data between disparate source and destination systems wherein:

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- o at least one generator modules extracts data from the said source system and convert it to XML source data,
- o at least one transformer modules transforms the XML source data into an XML format compatible with delivery into the said destination system,
- o at least one sink modules with means for delivering the processed XML into the destination system,

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- means for business process management and execution where each discrete task of a business process is defined and executed as a single XML processing task; and
- means for publishing a hypertext file set on the World Wide Web with information about the status of a business process in execution.

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16. The management system according to any of the preceding claims, wherein the request from the external client contains information or data, which are used by the adapter module to determine which electronic document to execute.

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17. In a network with a plurality of network devices, a method for managing and executing structured-data processing tasks, comprising the following steps:

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- receiving a request, from an external client, for execution of a predefined context-dependant, structured-data processing task as it is defined by an instruction set wherein each of the said structured-data processing tasks is encoded in an instruction set using a special purpose, high-level programming language designed for management of processing of any structured data,
- interpreting and validating the instruction set and set up context-dependant execution environment based on the said instruction set and information found in the request from said external client,
- executing the context-dependant structured-data processing task, wherein the execution is comprised of the following steps:
 - connecting to back-end systems on the network and convert native back-end system data to structured source data, and optionally,
 - transforming the source structured-data into processed structured-data,
 - react to and/or ~~somehow~~ deliver the processed structured-data back to the requesting client.

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18. The method according to claim 17, wherein the processing of the said structured data is performed in the Extensible Mark-up Language (XML) format.

5 19. The method according to claims 17 or 18, wherein said request is received through Hyper Text Transfer Protocol (HTTP).

20. The method according to any of the claims 17-19, wherein said request is received through Short Message Service (SMS).

10 21. The method according to any of the claims 17-20, wherein said request is received through Multimedia Message Service (MMS).

22. The method according to any of the claims 17-21, wherein said request is received through Simple Object Access Protocol (SOAP).

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23. The method according to any of the claims 17-22, wherein the XML data is transformed using Extensible Stylesheet Language Transformations (XSLT).

20 24. The method according to any of the claims 17-23, wherein transforming the source structured-data into processed structured-data comprises transformation to XML format from formats supported by at least one of the following back-end systems:

- ODBC and/or JDBC compliant databases,
- file system on the computer in which the said management system is executing,
- any data source capable of communication through the Hyper Text Transfer Protocol (HTTP),
- 25 - any data source capable of communication through the Simple Object Access Protocol (SOAP),
- Microsoft Exchange TM Personal information management (PIM) system,
- Lotus Domino TM Personal information management (PIM) system,
- 30 - any directory service through the Light-weight Directory Access Protocol (LDAP),
- any email system through Simple Mail Transfer Protocol (SMTP), Post Office Protocol (POP / POP3) or Internet Message Access Protocol (IMAP).

35 25. A computer readable medium having stored therein instructions for causing a central processing unit to execute the method of any of Claims 17 - 24.